

Notice of Allowability

Application No.

10/657,251

Examiner

Alan A. Mathews

Applicant(s)

NOMURA ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed 3-16-05.
2. ☒ The allowed claim(s) is/are 24-44.
3. ☒ The drawings filed on 06 June 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/923,443.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's ~~Amendment~~ / Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Alan A. Mathews

Alan A. Mathews
Primary Examiner

TERMINAL DISCLAIMER

1. The TERMINAL DISCLAIMER filed March 16, 2005, has been approved and has been entered.

Priority

2. The Examiner has checked the IFW file of the parent application (S.N. 09/923,443) and has found the certified copy of the foreign priority papers, which were filed August 8, 2001.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance:

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The prior art of record does not disclose or suggest at least one diffraction grating pattern being divided into eight regions, each of the regions includes a diffraction grating, and an image of the at least one diffraction grating pattern being projected onto a test substrate

or an image detector by the projection-type exposure apparatus in combination with all the other elements recited in independent claim 24.

The prior art does not disclose or suggest exposing the image of the at least one diffraction grating pattern and an image of the reference pattern onto the substrate simultaneously, the at least one diffraction grating pattern and the reference pattern comprising a test mark in the evaluation mask; and measuring a relative distance of the image of the at least one diffraction grating pattern formed on the substrate and the image of the reference image formed on the substrate in combination with all the other steps recited in independent claim 35

The prior art does not disclose or suggest exposing the image of the at least one diffraction grating pattern and an image of the reference pattern onto the substrate simultaneously, the at least one diffraction grating pattern and the reference pattern comprising a test mark in the evaluation mask under the condition of $\lambda / \{NA(1-\sigma)\} < P < 2 < \lambda / \{NA(1 + \sigma)\}$, where σ is a partial coherence of a lighting optical system for lighting the rest mark, P is a period of an image of a first pattern of the test mark, λ is the wavelength of light of the lighting optical system and NA is a numerical aperture of the projection optical system; and measuring the relative distance of the image of the at least one diffraction grating pattern formed on the substrate and the image of the reference image formed on the substrate in combination with all the other elements recited in independent claim 42.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews
Primary Examiner
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